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PRODUCT INFORMATION



Bafilomycin A₁ Item No. 11038

CAS Registry No.: 88899-55-2

Formal Name: (3Z,5E,7R,8S,9S,11E,13E,15S,16R)-8-hydroxy-16-[(1S,2R,3S)-2-hydroxy-1-methyl-3-[(2R,4R,5S,6R)-tetrahydro-2,4-dihydroxy-5-methyl-6-(1-methylethyl)2H-pyran-2-yl]butyl]-3,15-dimethoxy-5,7,9,11-tetramethyloxacyclohexadeca-3,5,11,13-tetraen-2-one

Synonym: NSC 381866

MF: C₃₅H₅₈O₉

FW: 622.8

Purity: ≥95%

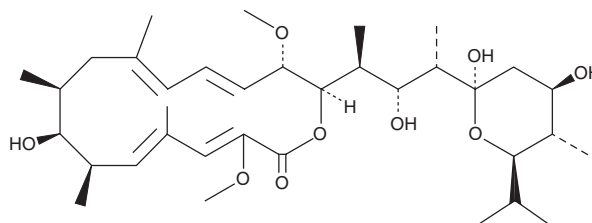
UV/Vis.: λ_{max}: 248, 288 nm

Supplied as: A crystalline solid

Storage: -20°C

Stability: ≥2 years

Item Origin: Bacterium/*Streptomyces* sp.



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Bafilomycin A₁ is supplied as a crystalline solid. A stock solution may be made by dissolving the bafilomycin A₁ in the solvent of choice, which should be purged with an inert gas. Bafilomycin A₁ is soluble in organic solvents such as DMSO and methanol. The solubility of bafilomycin A₁ in these solvents is approximately 5 mg/ml.

Description

Bafilomycin A₁ is a fungal metabolite that has been found in *Streptomyces* and has diverse biological activities.¹⁻⁵ It is an inhibitor of vacuolar H⁺-ATPases (V-ATPases; K_i = 0.5 nM in *N. crassa* vacuolar membranes) and is greater than 1,000-fold selective for V-ATPases over Na⁺/K⁺-, Ca²⁺-, and H⁺-ATPases.^{1,4} Bafilomycin A₁ (100 nM) inhibits autophagosome maturation and protein degradation in H-4-II-E cells.² It inhibits chloroquine-induced apoptosis in primary cerebellar granule neurons (CGNs) but not chloroquine-induced inhibition of macroautophagy.³ Bafilomycin A₁ (100 nM) reduces viral yield in the culture supernatant of Vero E6 and Huh7 cells, as well as HEK293T cells expressing human angiotensin-converting enzyme 2 (ACE2), infected with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2).⁵ It also reduces lung RNA copy numbers and viral pneumonia in ACE2 transgenic mice infected with SARS-CoV-2 when administered at a dose of 0.1 mg/kg.

References

1. Bowman, E.J., Siebers, A., and Altendorf, K. *Proc. Natl. Acad. Sci. USA* **85**(21), 7972-7976 (1988).
2. Yamamoto, A., Tagawa, Y., Yoshimori, T., et al. *Cell Struct. Funct.* **23**(1), 33-42 (1998).
3. Shacka, J.J., Klocke, B.J., and Roth, K.A. *Autophagy* **2**(3), 228-230 (2006).
4. Dröse, S., Bindseil, K.U., Bowman, E.J., et al. *Biochemistry* **32**(15), 3902-3906 (1993).
5. Shang, C., Zhuang, X., Zhang, H., et al. *Viol. J.* **18**(1), 46 (2021).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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